CLAIMS:

1. A method comprising:

creating a data encoded object beam from an interior portion of an input light source using a spatial light modulator; and

creating a reference beam from a perimeter portion of the input light source.

2. The method of claim 1, wherein the spatial light modulator includes a set of controllable optical elements, the method further comprising optically directing the perimeter portion of the input light source with a perimeter reference zone positioned around the set of controllable optical elements of the spatial light modulator.

3. The method of claim 2, wherein the perimeter reference zone comprises a non-controllable optical element extending around the set of controllable optical elements.

4. The method of claim 2, wherein the perimeter reference zone comprises a reference mask.

5. The method of claim 2, wherein the perimeter reference zone optically adjusts one or more optical characteristics of the perimeter portion of the input light source.

6. The method of claim 2, wherein the set of controllable optical elements includes transmissive optical elements and the perimeter reference zone comprises a non-controllable transmissive optical element.

7. The method of claim 2, wherein the set of controllable optical elements include reflective optical elements and the perimeter reference zone comprises a non-controllable reflective optical element.

8. The method of claim 1, further comprising optically directing the data encoded object beam and the reference beam into a medium such that the data encoded object beam and the reference beam interfere to create a hologram in the medium.

9. A spatial light modulator comprising:

a set of controllable optical elements to create a data encoded object beam from an interior portion of an input light source; and

a perimeter reference zone positioned around the set of controllable optical elements to create a reference beam from a perimeter portion of the input light source.

10. The spatial light modulator of claim 9, wherein the perimeter reference zone comprises a reference mask.

11. The spatial light modulator of claim 9, wherein the perimeter reference zone optically adjusts one or more optical characteristics of the perimeter portion of the input light source.

12. The spatial light modulator of claim 9, wherein the perimeter reference zone optically adjusts a phase of the perimeter portion of the input light source.

13. The spatial light modulator of claim 9, wherein the perimeter reference zone optically adjusts a polarization of the perimeter portion of the input light source.

14. The spatial light modulator of claim 9, wherein the set of controllable optical elements include transmissive optical elements and the perimeter reference zone comprises a non-controllable transmissive optical element.

15. The spatial light modulator of claim 9, wherein the set of controllable optical elements include reflective optical elements and the perimeter reference zone comprises a non-controllable reflective optical element.

16. The spatial light modulator of claim 9, further comprising a control unit to control the set of controllable optical elements and define bit maps in the data encoded object beam for storage as holograms.

17. A method comprising:

creating a data encoded object beam from a perimeter portion of an input light source using a spatial light modulator; and

creating a reference beam from an interior portion of the input light source using the spatial light modulator.

18. The method of claim 17, wherein the spatial light modulator includes a set of controllable optical elements, the method further comprising optically directing the interior portion of the input light source with an interior reference zone positioned inside a set of controllable optical elements of the spatial light modulator.

19. A holographic data storage system comprising:

a holographic medium; and

spatial light modulator including a set of controllable optical elements to create a data encoded object beam from an interior portion of an input light source, and a perimeter reference zone positioned around the set of controllable optical elements to create a reference beam from a perimeter portion of the input light source, wherein the data encoded object beam and reference beam interfere in the holographic medium to create a hologram.